

Fetter-lane, in Fleet-street, joining the main line at the same point. These, however, as well as the main road, from Fetter-lane, the city boundary, will, of course, have to be decided on and carried out by the corporation.

The Appendix contains a communication from Mr. Braidwood on the means of preserving the records from fire, which will apply in other cases, and may be usefully recorded here.

"In the first place, I have assumed that a Record Office must be so built that no fire in any one compartment can by possibility affect another; also, that the safety of the building, as a whole, against fire, must not depend on the care and attention of any one, or on any outward appliances.

I am not aware of any incombustible material which can be used for the support of floors, so as to allow a tolerable size of apartment, with sufficient light, except iron.

Iron, however, must be used with the greatest caution, as, of all building materials, it is one of the most rapidly and most seriously affected by fire. Mr. Fairbairn, engineer of Manchester, in his interesting experiments on the strength of cast-iron, published in the Seventh Report of the British Association, page 409, states that, on raising the temperature of cold blast cast-iron from 26 to 190 degrees Fahrenheit, the loss of strength was 15 per cent; and, in raising the temperature of hot blast from 21 to 190, the loss of strength was 10 per cent; taking the average of the above-mentioned examples, it gives a loss of 12 and a half per cent. of strength, on a rise of temperature of 166 degrees.

The fusing-point of cast-iron is differently stated in different works, but it may be safely taken as not less than 3000 degrees Fahrenheit: therefore, according to the above experiments, less than one-half the heat required to melt cast-iron, would completely destroy its strength. I have now by me two specimens of cast-iron, which have been melted at fires which took place this year (22nd of February and 10th of September); and some time ago I sent to the Official Referees some pieces of cast-iron, and wrought iron melted also at a fire (7th of September, 1844).

As iron pillars are much more exposed to the action of the draft, and, in consequence, the intensity of the heat, I did not think it advisable to recommend them. Iron ties are still more easily affected by the heat, as a comparatively slight rise of temperature will so expand them, as to prevent them acting as ties,—in fact, make them totally useless, or rather worse, as what power they might exert would, in consequence of the expansion, be the reverse of ties.

Iron girders, if of considerable length, are apt to unsettle the brick-work by their expansion, if heated to any extent.

Again, it is a very common thing to have the mortar in the first course of bricks completely pulverized by the heat; in one instance, a great part of the first or lowest layer of bricks in an arch fell down of themselves (15th of July, 1843); therefore the brick arches in the proposed building ought not to be less than nine inches thick.

It is now a generally admitted principle by all who have turned their attention to the subject, that, as the cubic contents of any building or compartment of a building (if properly divided) increase, so does the intensity of the heat increase, and, of course, the loss of strength in the iron would increase in the same proportion. It must also be considered that, although a Record Office may be constructed without any combustible materials in the building itself, still, even in the size of the apartment proposed, say  $27 \times 17 \times 15$ , there would be at least twelve tons of Records in many of the rooms of the above size, disposed so as to have a thorough draft round them in every direction for the purpose of preservation; but, at the same time, this thorough draft would cause the ignition to proceed with greater rapidity, and very much increase the intensity of the heat.

For these reasons, I proposed that the bearing of the girders should not exceed seventeen feet; to this extent they might be made, I have no doubt, perfectly secure, if protected

from the effects of the heat, as they may easily be to a certain extent, and also, that each compartment should not exceed  $27 \times 17 \times 15 = 6885$ , the height being intended to give two sets of shelving.

This appears to me the largest size of room that could be used with perfect safety. I would even advise the room to be divided into two, with iron window shutters, for the more precious description of Records.

One very great advantage, from the small size of the rooms, would be that, should a fire take place, the loss would be in proportion to the size of the room.

I may here state, that what are commonly called fire-proof buildings (cast-iron girders and brick arches) are not so, if the compartments are large, and a sufficient quantity of combustible materials to raise the iron to a certain temperature be introduced."

"Respecting the mode of heating the building, I strongly recommend open fire-places (two in each room) for safety.

There are many objections to heating by hot air or hot water:—

1st.—A considerable number of fires have been caused by both modes.

2nd.—Either mode induces a general communication through the building, not only by means of the pipes, but it is next to impossible to pass a pipe which is alternately heated and cooled through brick or stone-work air-tight, owing to the contraction and expansion of iron, without expansion joints, which are a considerable expense, and require constant attention.

3rd.—The heat required for heating so great an extent of building must be generated in one or more furnaces, and these, with their flues, are such constant causes of risk and trouble, that no furnace or close fires should be permitted within any premises which are meant to be absolutely safe from fire.

4th.—I have been given to understand that a thorough ventilation is believed in to be the most efficient means of preserving Records; and it is submitted that two open fire-places in each room, with independent flues, would better effect that end than either hot air or hot water. These fires could be lighted at pleasure in any one or more rooms that might most require drying or draft; at present, I am not aware that heating is at all necessary for the preservation of Records, except under peculiar circumstances, when the fires could be lighted."

The newspapers of Wednesday last would lead to the impression, that the feeling in favour of improvements is strong and widely spread, the "Court Circular" of that day chronicling little else than deputations with that end in view. A deputation from the city of London had yesterday an interview with the Commissioners of Woods and Forests: a deputation from St. George the Martyr, Southwark, had an interview yesterday with the Commissioners, on the necessity of taking immediate steps for the commencement of forming a new street through the unhealthy and depraved district, the Mint: the Quadrant Improvement Association came up to the Commissioners yesterday; the Metropolitan Sanatory Commission held a meeting yesterday, &c., &c., &c.; but if we look to the miserable aspect of the intended extension of Farringdon-street to Clerkenwell, and remember that that abominable nuisance, Middle-row, is even now in course of re-construction, we must doubt the genuineness of the feeling, and look for better times.

A FLYING BRIDGE GIVEN WAY WITH A CROWD.—The Austrian Archduke Stephen, in journeying from Koman to Raab, had just passed a flying bridge across the Danube, followed by a crowd of people, when the bridge or a balustrade gave way, and precipitated an immense number of persons, with two carriages in the Archduke's suite, into the river, where a number of persons—accounts varying from nine to forty-six—were drowned.

## PROGRESS OF BUILDING IN PARIS.\*

THE effect of railways in changing the centres of activity, and creating new towns by the side of the old ones, or upon spots where populations could not possibly have been congregated before, is very remarkable. It has become so evident here, that it could not fail to draw attention; and the municipal authorities, at length awakened to the importance of the subject, and the danger menacing them, are seriously considering what remedy they can apply to the evil, how to save their revenues, or profit by the change. A railway terminus acts like a loadstone; it attracts towards itself in a moment a whole population. Streets branch out in every direction, forming so many rays, of which the station is the focus and centre of animation; extend themselves to the old quarters and districts, which far removed from the heart of towns, seemed almost deprived of life, inspiring them with renewed vigour, and at the same time giving an aspect of cleanliness and beauty for which they are alike indebted to paint and spirit.

It is not merely in increased bustle and activity that these new creations of industry are remarkable; there is a general character of improvement, both in the laying out of the streets, in the building of the houses, and in the adoption of a system of sewerage and drainage, much wanted in the older parts of the French metropolis. In these respects the improvements are decidedly great; and hence there is a double motive for the preference which the public gives to the new localities, and an encouragement to the architect and builder to erect such edifices as may be striking in point of taste and novelty of design and ornament, as also for their interior arrangements, commodiousness, and salubrity.

It cannot be said, that the modern productions in architecture and construction are not a significant evidence of increased skill in building as an art, and attention to those points so important to the comfort and health of the inhabitants; although perhaps objections may be raised as to the taste displayed in a few edifices, the capriciousness of the style, or the luxuriance of the decoration. On these matters every one will have his little saying,—may prefer plainness to richness, simplicity to profusion, whitewash to gilding or colouring. But if we are to have any general improvement, it is quite clear that the field of fancy and imagination must be free as air, for genius to have a chance with mediocrity; and that we must pardon those little extravagancies of ideality or perhaps of mere whim, which we shall find even among the most perfect works of nature itself. These have even their end and object; are not always deficient in beauty, nor ungoverned by rules. It is not then by adhering strictly and severely to the bare principles adopted in the schools, nor by copying servilely the mere masters in art, that new beauties can be created; it is, on the contrary, by the imitation of the conduct of the great masters in escaping from the drudgery of vulgar admiration and vulgar respect for their predecessors, that progress can be made, and that endless variety and newness, which are an evidence of genius, be produced.

Richness of decoration and embellishment in the houses of the middle or upper classes is rarely to be met with, except in times of peace and prosperity. The general occupation of the mind by the stirring events and anxieties of war; the absorption of its energies in the animal struggles for home and country; the calls upon the purse to meet the necessities of Government; and the paralyzing of industry and commercial enterprise, leave neither the will nor desire for embellishment, nor give the opportunity and freedom to many to cultivate the taste and talents they may naturally possess. A few only of the very rich here and there, or the favourites of fortune in the exuberance of their happiness, will surround themselves with the generally forbidden luxuries, and force into productiveness the unpropitious field of art. Splendid monuments may rise, as if by enchantment, at the conqueror's command,—massive, magnificent, complete in all their parts, perfect as to the rules of art, and yet be after all but copies of copies, imitations of former conceptions, without any thing new or striking in them. Domestic architecture will, however, lie dormant, comparatively speaking, and be of so